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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.:	2503-A	Art Unit:	1806
Serial No.:	08/385,229	Examiner:	T. Nisbet
Filed:	February 8, 1995		
Applicants:	Cindy A. Jacobs and Craig A. Smith		
For:	METHOD OF TREATING TNF-DEPENDENT INFLAMMATION USING TUMOR NECROSIS FACTOR ANTAGONISTS		

#20 8/2/95 7-31-95

DECLARATION OF DR. LARRY WAYNE MORELAND UNDER 37 CFR 1.132

I, Larry W. Moreland, M.D., a resident of 2203 Panorama Trace, Birmingham, Alabama 35216, hereby declare and say that:

1. I am employed by The University of Alabama at Birmingham, as Associate Professor of Medicine and Director, Arthritis Clinical Intervention Program. My curriculum vitae is attached as Exhibit A.

2. I am a co-author of the manuscript, Moreland et al., "Results of a Phase I Trial Using Recombinant Soluble Tumor Necrosis Factor Receptor (p80) Fusion Protein (sTNFR:Fc) to Treat Rheumatoid Arthritis." A copy of which is attached as Exhibit B.

3. The experiments and data reported in Exhibit B can be summarized as follows: we examined the effects of sTNFR:Fc on severe, refractory rheumatoid arthritis in sixteen patients. Recombinant human sTNFR:Fc was administered intravenously followed by four weeks of twice weekly subcutaneous administration. The measured clinical parameters were: painful joint score, swollen joint score, joint score, morning stiffness, erythrocyte sedimentation rate and C-reactive protein. As described on page 8 of Exhibit B, there was a 44% mean improvement in total pain and total joint scores for patients receiving sTNFR:Fc as compared to only a 22% improvement for patients receiving placebo. Additionally, average morning stiffness improved by 55% in the treated patients. The Westergreen erythrocyte sedimentation rate (ESR) decreased 32%, which was significant ($p < 0.05$). Finally, the C-reactive protein levels also decreased significantly (27%) in treated patients compared to placebo patients (13%). Based on these observations and my experience, I concluded that sTNFR:Fc is well tolerated and that there were trends in improvement in painful and swollen

tender joint counts and biological indicators of inflammation. Moreover, the positive clinical results I obtained merit the further evaluation of sTNFR:Fc as a therapeutic agent in the treatment of rheumatoid arthritis.

All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 6-13-95

Larry W. Moreland, M.D.